

ENVIRONMENTAL CHECKLIST

Purpose of Checklist:

The State Environmental Policy Act (SEPA), Chapter 43.21C, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply". Complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D).

For nonproject action, the references in the checklist to the words "project," "applicant," and "property or site" should read as "proposal," "proposer," and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable:

Sumas Energy 2 Generation Facility

2. Name of applicant:

Sumas Energy 2

3. Address and phone number of applicant and contact person:

David Eaden
Sumas Energy 2
335 Park Place
Kirkland, WA 98033
(425) 889-1000

4. Date checklist prepared:

December 29, 1998

5. Agency requesting checklist:

Washington State Energy Facility Site Evaluation Council

6. Proposed timing or schedule (including phasing, if applicable): Begin occupancy:

Construction is planned to begin with site preparation in mid-1999. Full construction mobilization and foundation activities is scheduled to begin in the first quarter of 2000. Commercial operation of the first unit of the project is schedule to begin in mid-2001. The second power island lags the first by approximately three months.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

The Sumas 2 Generation Facility will have two parallel power generating combined cycle units. These parallel units are planned to be constructed together, but could be constructed sequentially. There are no plans for additions, expansion or further activity beyond these two units.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

Application for Site Certification 99-1 submitted to EFSEC on January 11, 1999

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

Applications for Presidential Permits for border crossing facilities have been submitted to the U.S. Department of Energy (DOE) for the gas pipeline and transmission line crossings at the Canadian border. Natural gas import authorization and power export authorization are also needed from DOE, and construction authorization for the international boundary is needed from the U.S. Section, International Boundary Commission.

10. List any government approvals or permits that will be needed for your proposal, if known.

EFSEC provides one-stop approval for all state and local government approvals and permits needed for qualifying energy projects in the State of Washington. Table 1.6-1 in the EFSEC application summarizes all of the pertinent federal, state and local permits. In addition to EFSEC approval, the border-crossing permits enumerated in answer to question 9 above are required, and a permit from the U.S. Army Corps of Engineers for dredge and fill is required.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this

form to include additional specific information on project description.)

The project is a 720 megawatt gas-fired electrical generation facility. The project will be located on an approximately 37-acre site within an existing industrial zone in the City of Sumas, Washington. A new natural gas pipeline will be constructed to the site from a border crossing location approximately 4.5 miles to the east. This pipeline will be placed in an existing right-of-way, paralleling an existing pipeline which serves a cogeneration facility about one-quarter mile south of the proposed facility. It crosses through unincorporated Whatcom County lands before entering the borders of the City of Sumas. The project will also include approximately one-half (1/2) miles of new 230 kV electrical transmission lines. The lines will be routed from the project site to the north to cross the U.S./Canadian border. The lines will be located entirely within the City of Sumas.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The proposed project site is located on approximately 37 acres of industrially zoned land in Whatcom County, Washington within the city limits of Sumas. More specifically, the project site is located on the north side of State Route 9 (SR 9) near its intersection with Bob Mitchell Way to the east. A legal description, site plan, vicinity map, and topographic map are included in the EFSEC application. A copy of the vicinity map is attached.

B. ENVIRONMENTAL ELEMENTS

1. Earth

- a. General description of the site (circle one): **Flat**, rolling, hilly, steep slopes, mountainous, other.

- b. What is the steepest slope on the site (approximate percent slope)?

Two percent

- c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)?

Soil at the proposed plant site is mapped as Sumas silt loam and Puget silt loam. Alluvial deposits of silt, sand, and gravel are found at the plant site and along the gas pipeline and electrical transmission line routes. The central, northern, and eastern portions of the plant site are covered with fill material with thickness ranging from 1.0 to 3.5 feet.

- d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

No

- e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

The final site grade, as proposed, ranges from 40-ft. to 44.5 ft., requiring placement of up to 5.5 feet of fill materials over the plant area. While as much as 153,000 cubic yards of soil may be added for overall site grading, 17,100 cubic yards of topsoil may be stripped in access roadway, construction staging areas, and at the site of the future structures and facilities. The surface

elevations are expected to change less than about four to eight feet at any given location. At all locations the future grades will be higher than the current grades, except at the detention pond.

The construction of the gas pipeline will require removing existing obstacles such as trees, vegetation, and boulders as necessary from the construction right-of-way. Approximately 21,450 cubic yards of soils will be excavated to install the gas pipeline. After the installation of the pipeline, the ditch will be back-filled and regraded to approximately current topography.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe minor erosion that could occur on the site if soils are left exposed during heavy or lengthy rain occurrences.

Plant Site

The plant site is not located in an area expected to experience accretion by natural depositional processes. The potential for erosion or aggradation from the construction of the S2GF would primarily occur during construction. Based on the erosion factors for the site the potential for erosion is high. The potential for water-caused erosion will be minimized through the use of erosion control measures.

Gas Pipeline

In general, the proposed pipeline corridor is not located in areas expected to experience accretion by natural depositional processes. The potential exception is within creek and river channels crossed by the pipeline where natural processes could cause aggradation of sediments on top of the pipeline. This aggradation will not affect the integrity of the gas pipeline.

Excess soils would be generated as a result of the gas pipeline installation. The volume of the excess soils would be slightly more than the volume of displacement by the pipe; this is the result of the change in soil density resulting from the ground disturbance. The exposed disturbed soil would be susceptible to water-caused erosion, however erosion potential will be minimized through the use of erosion and sedimentation control measures.

Electrical Transmission Line

In general, the electrical transmission line corridor is not located in areas expected to experience accretion by natural depositional processes. The potential for erosion or aggradation from the construction of the transmission line would primarily occur during construction. Based on the erosion factors for the site the potential for water-caused erosion is high. The potential for erosion will be minimized through the use of erosion control measures.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Approximately forty percent of the thirty-seven acre site will be covered with impervious surfaces after project construction. Installation of the gas pipeline and the electrical transmission line will not create impervious surfaces.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any.

The applicant will implement a temporary erosion control plan during construction. After construction, all exposed soils will be protected from erosion with landscaping and ground cover.

Plant Site and Electrical Transmission Line

- Best Management Practices (BMPs) will be designed and implemented for all construction activities. These practices include limiting certain construction activities and installing control structures such as sediment traps, diversion ditches, and silt fences. This plan will include limits on the area to be disturbed, the retention of vegetation where feasible, drainage retention during construction, soil replacement, and replanting after construction.
- Silt fences/hay bales, diversion ditches, and hydroseeding will be sized to handle the 10-year, 24-hour storm. Accumulation of sediment is not considered to be significant problem. In addition, some jute matting may be required on adjacent slopes such as stream banks.
- Construction activities will be controlled to the extent possible to help limit erosion. Clearing, excavation, and grading will be limited to areas absolutely necessary for construction of the facility and the gas pipeline.
- Excavation and grading will be completed during the dry season to the maximum extent possible.
- Excavated materials will be reused as much as possible. Excess materials will be disposed of by spreading over the trench as much as possible. These materials will be placed where they will not easily erode, and will not be placed at slopes greater than 4H:1V. Disposal areas will be revegetated by hydroseeding.
- Soil stockpiles will be covered with visqueen where necessary to prevent excessive erosion during rainy periods.
- Areas outside the construction limits will be identified and clearly marked, and equipment operators will be instructed to avoid these areas.
- Surface runoff will be directed around and away from cut-and-fill slopes and conveyed in pipes or temporary channels.
- To the extent possible, slopes will be graded to no steeper than two feet horizontal (H) to one foot vertical (V).

Gas Pipeline

- Best Management Practices (BMPs) will be designed and implemented for construction activities. These practices include limiting certain construction activities and installing control structures such as sediment traps, diversion ditches, and silt fences. This plan will include limits on the area to be disturbed, the retention of vegetation where feasible, drainage retention during construction, soil replacement, and replanting after construction.
- Excess soils will be generated as a result of the installation of pipeline. The fill soils will be properly compacted to reduce the potential for post-installation erosion and settlement. Soils containing more than five percent fines by weight (that portion passing the No. 200 sieve) will be moisture-sensitive and site-specific mitigation measures will be implemented to protect exposed soils from precipitation prior to recompaction.
- Silt fences/hay bales, diversion ditches, and hydroseeding will be sized to handle

the 10-year, 24-hour storm. Accumulation of sediment is not considered to be significant problem. In addition, some jute matting may be required on adjacent slopes such as stream banks.

- Along the gas pipeline route, the top 12 inches of topsoil in the areas of agricultural and grasslands will be preserved for replacement. The grasslands will be re-seeded and the cornfields may be left as is after the installation.
- For the stream crossings along the gas pipeline route, the banks of the streams will be protected after disturbance using rip-rap or geotextiles to limit post-installation erosion.

2. Air

- a. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

There would be air emissions from the project both during the construction phase and during operation. The emissions are detailed in Sections 2.11, 3.2, and 6.1 of the Application for Site Certification. The following provides a brief summary.

Emissions to the air will occur from machinery and truck exhaust during construction. Typically, these emissions include carbon monoxide, nitrogen oxides, sulfur oxides, hydrocarbons and particulate matter. The concentration of these emissions generally depends on the rate of emission and on how well they are dispersed by the wind. Because the site is fairly flat, there will be relatively little grading of the site prior to construction. Therefore, dust generated by excavation and grading will be short term. Dust from access roads will be controlled by applying gravel or paving the access road and watering as necessary.

Based on the projected emissions during operation, the project is subject to a Prevention of Significant Deterioration (PSD) Permit. The PSD Permit is included as part of the Application for Site Certification (Section 6.1 of the Application).

MFG conducted an air quality impact assessment for the S2GF facility using five years of meteorological data from Abbotsford Airport. The analysis considers two turbine vendors employing different control technology strategies. The Air Quality Impact Assessment that follows indicates:

- Predicted maximum concentrations of criteria pollutants resulting from S2GF emissions are small fractions of the Class I and Class II increments established by the PSD program
- Annual NO_x concentrations for one of the turbine vendors being considered are over the EPA's significant impact level. However, MFG's analysis indicates the predicted maximum concentrations from the facility when added to the contribution from other increment consuming sources would not significantly contribute to an exceedance of the PSD increments
- Total air pollutant concentrations are much less than the WAAQS or NAAQS established to protect human health and welfare when the maximum predicted concentrations are added to the highest values measured at Abbotsford

- **Predicted concentrations of toxic air pollutants potentially released from S2GF are below Ecology's Acceptable Source Impact Levels.**

McCulley, Frick and Gilman, Inc. (MFG) assessed Air Quality Related Values including regional haze, the effects of primary and secondary pollutants on sensitive plants and soils, and other effects associated with secondary aerosol formation, for Class I areas within 175 km of the S2GF site. We employed a screening analysis designed to provide very conservative estimates of secondary aerosol formation, deposition flux, and extinction coefficients for visual range.

Sumas 2-related concentrations of SO₂ and NO₂ predicted for the Class I areas are small fractions of the USFS recommended levels for the protection of sensitive vegetation. The deposition of secondary aerosols from the facility are also less than USFS criteria for significant impacts to soils in these pristine areas. Based on USFS criteria, acidification of aquatic resources is not expected. While the cumulative effects of other existing sources are not considered in this analysis, the magnitude of the predictions from Sumas 2 are generally insignificant and not expected to cause or contribute to the injury of the terrestrial ecosystems within the Class I areas.

MFG assessed the proposed facility's impacts to regional haze in Class I areas. We investigated perceptible changes in visual range by examining the potential increase in light scattering due to the presence of secondary aerosols from the project. We calculated concentrations of secondary aerosols in Class I areas attributable to Sumas 2 using a series of consecutive conservative assumptions. This analysis indicates secondary aerosols potentially formed by emissions from S2GF (primarily ammonium nitrate) could affect regional visibility on the clearest days under some meteorological conditions in the vicinity of some Class I areas.

- b. Are there any off-site sources of emissions or odor that may affect your proposal? If so generally describe.

No

- c. Proposed measures to reduce or control emissions or other impacts to air, if any:

The project will use Best Available Control Technology (BACT) and monitoring to ensure that federal and state air quality standards are met.

3. Water

a. Surface:

- 1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Johnson Creek passes about one-quarter mile south of the site and bends north about one-quarter mile east of the site, paralleling the east boundary. Johnson Creek is tributary to the Sumas River. The plant site contains two wetland areas, one a farmed wetland pasture (FWP) and the other a wetland ditch (W). The FWP wetland is located at the northwest part of the plant site and on the east edge of a forested wetland. The FWP wetland is 0.89 acres in area; however, the overall size of the wetland, including offsite forested and emergent wetland parts is 10.6 acres. The wetland drainage crosses the site from west to east and discharges to an unnamed tributary of Johnson Creek. The onsite portion of the wetland ditch measures approximately 1.0 acres. The referenced wetland areas are shown in Figure 3.4-2 of the EFSEC

application.

2) Will the project require work over, in, or adjacent to (within 200 feet) the described waters. If yes, please describe and attach available plans.

The project will result in the filling and culverting of 1.9 acres of palustrine emergent wetlands. Of these, 0.9 acres are farmed wetlands (FWP) and 1.0 acre is a wetland ditch (W). The 0.9 acres of impacted farmed wetlands are located on the east edge of the forested area and will be filled or encroached upon by the plant site. Section 3.4 of the EFSEC application describes the impact and mitigation in detail. All stream in the pipeline route will be bored, all those crossed by the transmission line will be spanned.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

An estimated 15,000 cubic yards of fill will be placed in the 1.9 acres of wetlands described above. The fill will be brought from the Everson pit in Whatcom County, about eight miles southwest of Sumas. Fill will be a combination of sand, gravel and soil.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

Yes. Section 2.15 of the EFSEC application describes the location with respect to the floodplain and includes a map.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No

b. Ground:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose and approximate quantities if known.

No

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals....; agricultural; etc.) Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

None

c. Water Runoff (including storm water):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will the water flow? Will this water flow into other waters? If so, describe.

There is only one direct aquatic discharge from the site to a surface water. After collection, water quality treatment, and detention of stormwater, some stormwater will be discharged via underground pipe to an unnamed tributary of Johnson Creek and the Sumas River. An on-line detention pond and bioswale will provide water quality treatment for site runoff occurring with a 6-month, 24 hour duration storm. The pond will also limit runoff from the S2GF site to pre-development conditions for the design storm, currently anticipated to be the 25-year frequency storm. Section 2.10 of the EFSEC application provides a discussion of stormwater management for both construction and operation.

2) Could waste materials enter ground or surface waters? If so, generally describe.

The S2GF may enhance the water quality of Johnson Creek through its treated, detained stormwater discharges. Since the site was formerly farmed, that land use may have contributed fertilizer and pesticides to Johnson Creek. The SE2's development of the S2GF should result in a positive impact on water quality through reduction of agricultural pesticides and fertilizers. Section 3.3 of the EFSEC application

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

A temporary erosion and drainage control plan will be implemented during grading and construction. Post-development stormwater drainage facilities will be designed to remove waste products and contaminants to the greatest degree practical. Sections 2.7, 2.10 and 3.3 of the EFSEC application provide detail.

4. Plants

a. Check or circle types of vegetation found on the site:

-deciduous tree: alder, maple, aspen, black cottonwood, willow, hazelnut, crabapple, paper birch

-evergreen tree: fir, cedar, pine, other

-shrubs: salmonberry, blackberry, snowberry, red-osier dogwood

-grass: barnyard grass, orchard grass, bent grasses, quackgrass, perennial ryegrass

- pasture: Kentucky bluegrass, white clover, orchard grass, redtop, chickweed

-crop or grain: corn and hay fields

-wet soil plants: cattail, buttercup, bullrush, skunk cabbage, rushes, reed canary grass, smartweed

- water plants: water lily, eelgrass, milfoil, other

-other types of vegetation: plaintain, dandelion, thistle, tansy, goldenrod, yarrow

b. What kind and amount of vegetation will be removed or altered?

Plant Site

Developed areas within the plant site will result in the permanent loss of 26 acres of agricultural land, mostly planted with corn. The loss will have insignificant impacts to wildlife or to other

adjacent plant communities.

Gas Pipeline

Installation of the gas pipeline will result in the temporary disturbance of agricultural lands vegetated with corn or pasture grasses located within the existing pipeline right-of-way. The impacts are considered to be temporary so long as Best Management Practices (BMPs) are followed.

Electrical Transmission Line

The proposed transmission line is to be placed within the existing street and railroad right-of-ways, therefore impacts are expected to be minimal. Disturbance will occur either in filled and graded areas with little or no vegetation, or grass shoulders which are maintained. These impacts are considered minimal because they will be placed mostly, and likely entirely, within disturbed areas.

Vegetation management of tall, dead and dying trees is required to prevent damage to transmission lines from windthrow. A typical management scheme is comprised of three zones, A, B and C. Zone A is from the limit of the outer powerline and extends outward 25 feet. In this zone all trees with a mature height of 25 feet or greater are removed. Trees less than 25 feet may remain, and tree trimming is permitted in the wire and clearing zone if tree removal is not desired due to ownership, environmental or cost considerations. Zone B extends from 25 to 30 feet beyond the outer transmission line. Maintenance includes trimming structurally sound conifers 20 inch (dbh) or greater, and deciduous trees which are 25 inch (dbh) or greater. Trees less than the specified dbh will be removed. Zone C extends to 30 feet beyond the outermost transmission line and includes the removal of dead, dying and unstable trees. Trimmed material and tree trunks are typically left on the ground in naturally vegetated areas for habitat features.

- c. List threatened or endangered species known to be on or near the site.

According to the Washington State Department of Natural Resources Natural Heritage Database, and field observations, no threatened or endangered plant species are known to be on or near the site.

- d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any.

A 2.06 acre wetland at the plant site is proposed to mitigate for wetland losses. The mitigation area is located along the south edge of the 10.6 acre wetland, immediately west of the plant site, and will be 700 feet wide by 120 feet in average depth (north/south). Mitigation will consist of wetland creation by lowering the final existing ground elevation by approximately two feet and then planting with native shrubs together with a lesser tree and emergent component. Wetland mitigation will consist of the creation of 1.5 acres of wetlands, the enhancement of 0.56-acre wetlands, and the preservation of 10.6 acres of forested wetlands which will be dedicated to the City of Sumas or placed into a conservation easement. All plants to be used in constructed and enhanced wetland areas and buffers are considered to be native or compatible and similar to naturally occurring species in existing adjacent wetland areas. Examples of these plants include black cottonwood, red alder, Pacific willow, salmonberry, red-osier dogwood, and slough sedge.

A visual screen of dense evergreen spruce, fir, hemlock, and juniper trees, 20-30 feet high at maturity will be planted in rows along the northern and southeast property lines.

In areas where the gas pipeline traverses agricultural areas, or areas occupied with grasses, the top 12 inches of topsoil will be removed and reserved for replacement. Grass areas will be re-seeded, while areas planted in corn may be left as is. In all cases the land will be graded to pre-installation contours. These measures will allow the temporarily disturbed areas to revert to pre-construction conditions.

With respect to the electrical transmission line, trimmed material and tree trunks are typically left on the ground in naturally vegetated areas for habitat features. Footing construction areas are to re-seeded as necessary.

5. Animals

a. Circle any birds and animals which have been observed on or near the site or are known to be on or near the site:

_birds: hawk, heron, eagle, songbirds, waterfowl
_mammals: deer, bear, elk, beaver, raccoon, skunk, vole, mouse, mole
_fish: bass, salmon, trout, lamprey, sculpin, herring, shellfish, other

b. List any threatened or endangered species known to be on or near the site.

Bald Eagle (*Haliaeetus leucocephalus*) – Federal and State Threatened Species

Bald eagle habitat for foraging and nesting is found along streams and rivers in the project area. Both wintering and resident bald eagles may occur in the project area. A bald eagle nest has been documented in 1998 in the project vicinity along the Sumas River. This nest is located approximately one mile north of the gas pipeline and one mile east of the plant site. Two night roosts are located about one mile southeast of the gas pipeline in trees on a steep forested slope (WDFW 1998).

Bull Trout (Coastal-Puget Sound ESU) – Proposed for federal listing as Threatened Species

Anadromous, resident and fluvial populations of bull trout may occur in the vicinity of the project area. Water temperatures in Johnson and Sumas Creeks and in tributaries of the Sumas River upstream from the river crossing are probably too high for reproduction to occur (Kraemer 1998). Bull trout could potentially rear in the Johnson and Sumas creeks. Sumas River bull trout would belong to the Transboundary Analysis area segment of the coastal/Puget Sound ESU. FWS considers the status of the Transboundary analysis area population of bull trout as “unknown” because of insufficient abundance, trend, and life-history information (FWS 1998).

Coho Salmon (Puget Sound/Strait of Georgia ESU) – Federal Candidate Species

Coho salmon rear in Johnson and Sumas Creeks in the vicinity of the pipeline crossings and spawn in Sumas Creek, Upper Johnson Creek and tributaries of the Sumas River above the project area. Coho salmon may also rear in Bone Creek in the vicinity of the pipeline crossing. The Sumas River is also used by coho salmon as a migration corridor to spawning tributaries upstream from the project area. Coho stocks in the Sumas River Basin are considered a native stock with wild production and unknown status by the WDFW (WDF et al. 1993).

Sea-run Coastal Cutthroat Trout – Federal Candidate Species

Sea-run coastal cutthroat trout rear in Johnson and Sumas Creeks in the vicinity of the pipeline

crossings and spawn in Sumas Creek, Upper Johnson Creek and tributaries of the Sumas River above the project area. Sea-run cutthroat trout may also rear in Bone Creek in the vicinity of the pipeline crossing. The Sumas River is also used by sea-run cutthroat trout as a migration corridor to spawning tributaries upstream from the project area. The status of sea-run cutthroat trout stocks in the Sumas River Basin is unknown.

c. Is the site part of a migration route? If so, explain.

Many species of birds forage and rest in the open agricultural fields, forests, and streamside areas in and near the project area during fall and spring migrations. Project construction and operation will not impact these activities in any significant way. Agricultural fields will remain available for migrating birds, and streams and forests will not be impacted by the project. Any disturbances to birds moving through the agricultural fields during the short period of gas pipeline installation will not result in any significant impacts to these birds. Waterfowl and other birds such as great blue herons that forage extensively in seasonally flooded fields and emergent wetlands will not be negatively affected by the project. The loss of the agricultural field at the plant site is insignificant compared with the large acreage of this habitat available in surrounding areas.

Coho salmon, steelhead and cutthroat trout, native charr, and lamprey use the Sumas River, Johnson Creek, and Sumas Creek as migration corridors during their spawning migrations. All streams crossed by the project will be bored with no barriers to upstream migration created and no disturbance to migrating fish. Project construction and maintenance will have no impact on fish migration.

d. Proposed measures to preserve or enhance wildlife, if any;

Mitigation for the loss of the wetland area at the plant site will include the creation/enhancement of a 2.06 acre wetland planted with native shrubs and trees. This wetland mitigation project should improve the wildlife habitat quality of this area and provide additional cover, forage, and breeding areas for amphibians, small mammals, and various birds. Therefore, there should be no loss of wildlife habitat functions.

Wildlife habitat along the gas line and electrical transmission line will be restored to pre-construction conditions.

Impacts to stream and river habitats will be avoided by boring under these crossings during the gas pipeline installation.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Natural gas will be consumed to generate electricity. Section 3.5 of the EFSEC application provides a detailed discussion of the consumption, source and availability of natural gas. Diesel fuel will be consumed to power emergency generators, if needed.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No

- c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

All structures will be built in conformance with the Washington State Energy Code.

7. Environmental Health

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire or explosion, spill, or hazardous waste, that could occur as a result of this proposal?

The risk of a significant fire or explosion during construction of the facility is considered to be extremely low. During construction small quantities of flammable liquids and compressed gases will be stored and used. Liquids will include construction equipment fuels, paints and cleaning solvents. Compressed gases will include acetylene, oxygen, helium, hydrogen and argon for welding. The potential hazards associated with these materials will be mitigated by following construction safety requirements found in Washington Administrative Code 296-155 and 29 CFR 1926 (OSHA).

Operation of the S2GF will require the use of natural gas, hydrogen as coolant for the combustion turbine generators, and ammonia for emission control. The natural gas fuel will be piped directly to the user, none will be stored on site. The emergency diesel generator fuel will be stored in a 1000 gallon above ground double walled tank. Smaller quantities of lubricating oils will be contained in the four turbine generator lubrication oil reservoirs and systems.

All of these materials and quantities are normal for this type of facility. The industry has many years of operation at many facilities with little history of explosions or fire. When explosions or fires occurred they resulted from equipment malfunctions or operator errors. During these incidents flammable gases were released in an unsafe manner, either inside equipment or the work area. The combination of flammable gases ignition sources and oxygen resulted in explosions. As a result of these incidents, codes, regulations and consensus standards have been upgraded to reduce the likelihood of recurrences. These upgraded measures will be complied with during all phases of construction and operation.

Hazardous material use during construction is primarily limited to chemical cleaning of the Heat Recovery Steam Generator (HRSG) and process piping before being placed in service. This work is performed by specialized contractors qualified to handle the materials. The contractor is responsible for providing, using and the properly disposing the used chemicals. A contractor has not been selected at this time so the specific chemicals to be used are not known. The following list is typical of the types of chemicals used during the chemical cleaning of the HRSG and piping:

- Aqueous ammonia
- Surfactant
- Corrosion inhibitors
- Citric or other similar acid
- Sodium nitrate
- Ammonium bicarbonate
- Anti foam agent

In addition, hazardous liquids which could generate solid or hazardous waste during construction could include diesel fuel and gasoline, lubricants, cleaning solvents and paint and paint residues. Hazardous solid waste materials could be generated by these fluids

during a spill and the subsequent cleanup which is discussed in Section 2.9 Spillage Prevention and Control of the Application for Site Certification. Other hazardous wastes which would be likely to be generated include used oil, spent antifreeze, unused adhesives, discarded water treatment chemicals and residuals and spent lead acid batteries. Non hazardous solid waste associated with construction activities could include empty containers, scrap wood, scrap metals and trash.

Operation of the S2GF will not produce any spent fuel wastes such as ash. A very small amount of sludge will be formed in the cooling tower. However, this sludge is not expected to be designated as dangerous and will be disposed of in a landfill.

Handling, storage and disposal of toxic and hazardous materials used in construction and operation of the project will be in accordance with applicable state and federal regulations as described below and will not result in a threat to public health and safety. Only minor amounts of hazardous wastes will be generated by the facility, primarily small quantities of materials such as used paints, thinners and solvents.

Hazardous Waste Management - Waste regulations (WAC 173-303) - Any dangerous wastes generated by the facility will be managed to ensure compliance with the Washington Dangerous Waste Regulation (WAC 173-303). The dangerous wastes will be limited to solvents and paint wastes generated during maintenance activities. A generator number has not as yet been assigned.

Hazardous Substances - Title III of the Superfund Amendments and Reauthorization Act (SARA Title III) and the Occupational Safety and Health Administration's Hazard Communications Standard mandate communications of information to local agencies to assist in response to emergency situations. Material Safety Data Sheets (MSDS) which provide specified information on each toxic or hazardous material stored and used on site will be maintained on file. A listing of MSDSs will be provided to local emergency response agencies. The MSDS describe the potential health effects of each substance under different types of exposure and appropriate safety and treatment measures. SE2 will provide an annual inventory of the toxic and hazardous materials used on site (in accordance with Tier 2 reporting requirements)

Hazardous Substance Release - If during the operation of the facility any substance listed in 40 CFR 302 is released to the environment, SE2 will notify EFSEC, the National Response Center, U.S. EPA, and the Washington Department of Ecology as required under Section 101(14) of the Comprehensive Environmental Response Compensation Liability Act (CERCLA) and the Model Toxics Control Act (MTCA) ch. 70.105D, RCW, ch. 173-340 WAC.

(2) Proposed measures to reduce or control environmental health hazards, if any:

The risk of fire or explosion at the S2GF will be mitigated by designing, constructing and operating the facility as required in the latest versions of the applicable codes, regulations and consensus standards. A representative list of applicable codes and regulations is presented in Appendix C.

The combustion turbine generator units will be equipped with specialized fire detection and protection system. Gas detectors will alarm when combustible gas in the combustion turbine unit enclosures reaches 25% of the Lower Explosive Limit (LEL). Should combustible gas concentration increase to 60% of LEL the gas detectors will shut down the combustion turbine, which results in closing the gas supply trip valve to the unit. The vent fans in the turbine enclosure will help to clear the combustible gas out of the enclosure. Thermal fire detectors and smoke detectors are located throughout the combustion gas turbine generator enclosure.

Excessive heat or smoke will trip the detectors which in turn release a fire smothering gas or a dry fire extinguisher.

The lubrication oil system reservoirs will be equipped with fire detectors and a water deluge system which will be initiated automatically.

The diesel generator building will be equipped with fire detectors and an automatically operated deluge system.

The ammonia storage facility will be equipped with leakage detectors and an automatically initiated water deluge system to cool the ammonia storage tank.

Site fire water will be stored in the cooling tower basin. A jockey pump will keep the fire system of hydrants and deluge systems pressurized. Upon operation of a deluge system or opening of a fire hydrant, the fire pumps will start to provide fire water as required.

The facility will be operated by qualified personnel using written procedures. Procedures will provide clear instructions for safely conducting activities involved in the initial startup, normal operations, temporary operations, normal shutdowns, emergency shutdowns and subsequent startups. The procedures for emergency shutdowns will include the conditions under which emergency shutdowns are required and the assignment of shutdown responsibilities to qualified operators to ensure that shutdowns are done in a safe and timely manner. Also covered in the procedures will be the consequences of operational deviations and the steps required to correct or avoid the deviations.

Before they are allowed to operate the facility, employees will be presented with a facility plan, including a Health and Safety Plan, and will receive training regarding the operating procedures and other requirements of safe operation of the plant. In addition, employees will receive annual refresher training, which will include testing of their understanding of the procedures. Training and testing records will be maintained.

Waste management procedures in accordance with WAC 173-303 will be followed for the facility.

A licensed qualified waste contractor will be responsible for treating or disposing the waste in an appropriate landfill.

Engineered safeguards will be in place during time of operation to preclude discharge of any hazardous material to the environment. A licensed qualified waste contractor will be responsible for treating or disposing the waste in an appropriate landfill. Asbestos or PCB materials will not be used in the construction or operation of the facility.

Waste management procedures in accordance with WAC 173-303 will be followed for the facility.

b. Noise

- 1) What types of noise exist in the area which may affect your project (for example: traffic, aircraft, equipment, operation, other)?

The site is located adjacent to an industrial area and a state highway. There is traffic noise and some industrial noise in the vicinity, however offsite noise will not affect the project.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

During the construction phase of the project, noise from construction activities would add to the noise environment in the immediate area. Such activities would generate noise levels as indicated in the table below. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours. Based on the typical attenuation of sound over distance (6 dBA per doubling of distance), construction noise levels in the residential area north of the project site would be about 20 dBA lower than those listed in the table below.

TYPICAL CONSTRUCTION EQUIPMENT NOISE

Activity	Type of Equipment	Range of Noise Levels (dB) at 200 Feet
Material Handling	Concrete Mixers Concrete Pumps Cranes	62-75 69-71 64-76
Stationary Equipment	Pumps Generators Compressors	57-59 59-70 64-75
Land Clearing	Bulldozer Dump	65-84 70-82
Grading	Scraper Bulldozer	68-81 65-84

It should be noted that no specific federal, state or local standards regulate noise from daytime construction activities. In fact, construction noise is exempt from City noise limits between the hours of 7 a.m.-10 p.m.

During operation, the proposed power plant would generate noise from a number of sources. Some of these sources are relatively quiet compared with other sources, and these quieter sources would not be audible when the louder equipment is operating. Section 4.1 of the Application for Site Certification contains an evaluation of noise impacts focused on the loudest noise sources, including the gas turbines, gas turbine generators, heat recovery steam generators (HRSGs), steam turbines, and the cooling tower.

Initial calculations based on the "base" Westinghouse package indicate sound levels would meet City noise limits at all property lines except at the eastern property line near the gas turbine package. At this location, the eastern gas turbine/HRSG would generate sound levels of approximately 81 dBA, or 11 dBA higher than the 70 dBA noise limit. Other noise sources did not significantly contribute to the exceedance at this location.

With the base Westinghouse package, calculated sound levels at the nearest residential property 1,400 feet north of the site would meet daytime noise limits but would exceed the 50-dBA night limit by 6 dBA. Each of the gas turbine packages would generate a sound level of approximately 52 dBA at this location. Other noise sources at the site do not significantly contribute to the exceedance at this location.

2) Proposed measures to reduce or control noise impacts, if any:

The site has been designed to minimize noise impacts to the nearest residential property. For example, preliminary site plans placed the cooling tower on the northern part of the site. However, the site plan was revised when it was pointed out that a southern location would reduce cooling tower noise impacts to residents north of the site. Cooling tower vendors were advised that noise was an important issue and proposals reflected features to reduce noise compared with standard models.

The steam turbine and gas compressor equipment will be enclosed in a building to reduce noise.

The north/south alignment of the combustion turbines, combustion turbine generator, and HRSG tends to reduce noise at the residences to the north. Preliminary noise calculations indicated that sound levels at the eastern property line and at the nearest residential receivers north and east of the site could exceed relevant noise limits without noise reduction modifications. Noise reducing options will be installed that will meet both the property line limit of 70 dBA and the night noise limit of 50 dBA at residential properties.

In addition, a firm specializing in industrial noise reduction was contacted to identify measures that could be taken to ensure compliance with applicable standards. Nooter/Eriksen has indicated that incorporating inlet silencing baffles and increasing the casing thickness will reduce the HRSG noise enough to ensure a combined sound level from both units of 67 dBA at the eastern property line and 47 dBA at the nearest residential receptor. A noise wall to reduce HRSG noise may also be considered adjacent to the HRSG on the eastern property line if noise testing at the site boundary indicates the need for further noise reduction.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties?

The site is zoned for industrial use, but is undeveloped. A portion of the site has been used for growing a variety of crops. Approximately 10 acres of the site is a wooded wetland.

Land uses adjacent to the project site generally include other industrial uses, residential uses, and farmland:

- North: an undeveloped industrial site (agricultural fields, trees) and Burlington Northern Railroad, north of the railroad is a dairy farm with a house and outbuildings extending along Kneuman Road; agricultural and sparse residences occur along Kneuman Road.
- South: local service road extension of Bob Mitchell Avenue and State Highway 9; Socco Forest Products; Sumas Cogeneration Company plant south of State Highway 9; other pasture and farmland; Dentech and Elenbaas Company to the southeast; to the southwest is a Sumas Industrial Park lot for sale and agricultural field; two residences and several agricultural outbuildings lie to the southwest.
- East: vegetated open space lies directly east of the project site and along Bob Mitchell Avenue. To the east of Bob Mitchell Avenue are Woodstone (stone-fired cooking equipment), and Cover All Shelter Systems; American Wood Treeters (appeared abandoned) and Desticon Transportation Inc. are to the northeast.

- **West: wetlands and wooded areas lie to the west of the project site; IKO Pacific Inc. and Valley Plumbing and Electrical Appliance and shop are located west along Halverstick Road.**

b. Has the site been used for agriculture? If so describe.

Yes. The project is sited on the Hesselgrave Tract, an approximately 34-acre parcel, of which approximately 26 acres historically have been farmed. Approximately eight acres of the site are in woods or wetlands and are not cultivated. A variety of crops have been grown on a seasonal basis. The site was farmed nearly continuously from 1974 through 1997. In 1991 and again in 1998 the property was not cropped. Site cropping history is as follows:

1974-1984	corn and grass silage
1985-1988	corn
1989-1990	peas
1991	not farmed
1992-1997	corn
1998	not farmed

c. Describe any structures on the site.

There are no structures on site

d. Will any structures be demolished? If so, what?

No.

e. What is the current zoning classification of the site?

Industrial

f. What is the current comprehensive plan designation of the site?

Major Industrial

g. If applicable, what is the current shoreline master program designation of the site?

The City of Sumas developed its original Shoreline Master Program (SMP) 1975 through the joint effort of the City of Sumas and a Sumas Citizens Advisory Committee. It was later revised to make the program consistent with changes in the Washington State Administrative Code pertaining to local master programs. The SMP is currently being amended to comply with the revised City of Sumas Comprehensive Plan adopted on October 12, 1998. Until such revisions are adopted, the 1975 SMP remains in effect.

The City's SMP applies to Johnson Creek and the Sumas River (the City's only designated shorelines), lands located within 200 feet of the ordinary high water mark (OHWM) of these streams, the 100-year floodplain located within 200 feet of "streamways," and "marshes, bogs and swamps" (as defined in the SMP) that are associated with Johnson Creek and the Sumas River.

The jurisdictional extent of the City's regulated shoreline area is potentially subject to dispute because of the SMP's prohibition on filling, clearing or developing "marshes, bogs and swamps." The SMP's use regulations for marshes, bogs, and swamps provide that they shall

not be drained, filled, dredged or cleared or developed. They also require a minimum distance of 100 feet from the edge of a march, bog or swamp where no development shall occur except roads and railroads. SMP 4.1.2.A. The City has historically interpreted this provision as applying only to wetlands located within 200 feet of the “streamways” (defined as the channels that contain the mean annual high water flow) of Johnson Creek and the Sumas River, because that was the extent of its regulation of the 100-year floodplain under the SMP. However, officials in Ecology’s Northwest Regional Office have interpreted the SMP to apply to all wetlands located within the City’s 100-year floodplain (which in Ecology’s opinion creates an “association” with the regulated streams).

The S2GF requires filling and culverting approximately 1.9 acres of wetlands on the plant site. It is unclear whether these wetlands are within the definition of “marshes, bogs and swamps” in the SMP, as outlined above. The development of the S2GF would not be consistent with the current version of the SMP as interpreted by Ecology because it includes development within wetlands located in the 100-year floodplain. The City, however, is expected to conclude that this area is outside the jurisdiction of its SMP, and therefore is not inconsistent with this local land use regulation.

The City of Sumas is revising its SMP to address the issue of development in and near wetland areas within the 100-year floodplain (pers. comm., D. Davidson, October 1998). The proposed amendments would regulate all wetlands within the 100-year floodplain, but would require mitigation in stead of prohibiting within Class IV wetlands. The Applicant will continue to track these regulations and will work with the City and EFSEC to ensure that the S2GF facility is consistent with them.

h. Has any portion of the site been classified as an environmentally sensitive area? If so, specify.

A portion of the site has been proposed for designation as a Natural System Protection Area (NSPA) by the City of Sumas. The site contains a combination of forested wetlands (including an approximately 10.6 acre forested wetland proposed as a Natural System Protection Area), farmed wetland pasture, prior-converted cropland, and nonwetland areas., and most of the area lies within the floodplain. The applicant proposes to fill approximately 1.0 acres of wetland ditch and approximately 0.9 acre of farmed wetland pasture for the S2GF project site. Wetland buffers of from 15 to 25 feet would also be impacted by development of the Project. The applicant has minimized impacts to wetlands by designing its site plan to avoid most of the wetlands on the Hesselgrave Farms site and will mitigate these impacts by creating and enhancing approximately 2.06 acres of wetlands on-site and preserving the forested wetland with either a conservation easement or a dedication to the City.

The Wetlands Protection Ordinance establishes buffers adjacent to wetlands. Buffer widths vary according to the classification of the wetlands and the City allows averaging and reduction of buffer widths if land owners develop enhanced buffers. Off-site mitigation is also permitted, provided that the mitigation receiving area is within an NSPA.

The S2GF site is adjacent to NSPA #4. This approximately 11.7-acre area lies within the undeveloped approximately 40-acre industrially-zoned parcel that has been optioned by SE2 and is currently owned by Hesselgrave Farms. The northern portion of this area is a forested wetland, and the southern part contains a farmed wetland pasture that is mapped in the National Wetland Inventory. The farmed wetland has minor value as waterfowl habitat, serves as flood- and stormwater-conveyance, and has potential for conversion to higher-quality wetland. The Applicant proposes to address mitigation and other aspects of wetland impacts through the Corps of Engineers permitting process, with additional attention given to compliance with the Sumas Comprehensive Plan goals and policies for the protection and enhancement of NSPAs.

i. Approximately how many people will reside or work in the completed project?

Operation of the S2GF will require 23 full-time employees working in either two 12-hour shifts or three 8-hour shifts.

j. Approximately how many people would the completed project displace?

No persons will be displaced as a result of the project.

k. Proposed measures to avoid or reduce displacement impacts, if any:

No measures are required.

a. Proposed measures to ensure the proposal is compatible with existing and projected land use plans, if any:

The existing land use plans designate the site for major industrial use. The project is an industrial use and would be compatible with the plans of the City of Sumas.

9. Housing

a. Approximately how many housing units will be provided, if any? Indicate whether high, middle or low-income housing.

No housing units will be provided. The project is an electrical generation facility.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle or low-income housing.

No housing units will be eliminated.

c. Proposed measures to reduce or control housing impacts, if any.

None are required.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The heights of the proposed structures are shown on the following table:

HEIGHTS OF PROJECT COMPONENTS

Structure	Height
Turbine Building	38'
Water Treatment Building	22'
Tanks	30'
Cooling Towers	40-46'
Emissions Stacks	125'

The power turbines will be enclosed in buildings, and other ancillary elements will include fuel

and liquid storage tanks, an electrical switchyard, cooling towers, and emission stacks. Project elements, except for the emission stacks, will be painted predominately earth tones. The emission stacks will be painted a light, warm-tone gray, or similar color.

- b. What views of the immediate vicinity would be altered or obstructed?

Views will be altered in the sense that there will be buildings, parking and landscaping on land that is now vacant. Once constructed, the generation facility is expected to introduce "Low" to "High" visual impacts, depending on the viewer type and viewing distance. The facility will be visually compatible with the industrial development already existing in the area. The form, color, and scale of buildings will be similar to nearby industrial/warehouse development. See Section 5.1.5 of the Application for Site Certification for a detailed discussion of visual impacts and simulated views of the completed project.

- c. Proposed measures to reduce or control aesthetic impacts, if any:

A visual screen of dense evergreen spruce, fir, hemlock, and juniper trees, 20-30 feet high at maturity will be planted in rows along the northern and southeast property lines. A grove of trees exists near the northwest corner of the site and will provide some screening of the electrical switchyard area.

To avoid impacts to the nearest residence, located northwest of the site:

- Existing trees will be used as landscape buffers and will remain on the perimeter of the site
- To reduce the visual presence of the S2GF itself and increase its visual compatibility with the context of the surroundings:
- Landscaping will be provided in parking lots and along access roads,
- The facility will be painted with earth-tone colors, and
- The emission stacks will be painted with earth tones.

In addition, the following measures may be included if needed:

- Provide additional screening by including low tree/shrub plantings, and plant vines at recommended intervals around the perimeter of the galvanized chain link fence, and
- Construct screening walls around ancillary elements. Wall treatments could include aesthetic material/texture patterns and vines.

II. Light and Glare

- a. What type of light and glare will the proposal produce? What time of day would it mainly occur?

The S2GF will be illuminated at night. Plant lighting will consist of low level lighting around exit areas (minimum 2 footcandles) and general outside area (0.2-5 footcandles) including ground level operating areas, stairs and platforms, roadways, fuel storage areas, and parking areas (Eaden, 1998). This lighting will be provided for purposes of general operator access and safety under regular operating conditions. Precise and detailed placement of lighting

fixtures has not yet been determined, but outdoor lights will be a combination of pole-mounted and structure mounted lights and likely will be standard street light height in (the range of 20-40 feet). Outside lighting around the exterior of buildings and ancillary equipment likely will be placed above doorways. Generally, lighting angles will vary, determined by economic evaluation of fixture wattage, light patterns, and light levels. No high-mast, wide area lighting is planned.

Spot lighting will be provided for illumination level enhancement where needed around operating equipment. This lighting will be higher in intensity than general outside lighting (up to 10 footcandles), but will be limited to specific areas and occasional usage. This lighting can be adjusted to minimize light spillover or direct glare in response to specific site conditions. Emergency lighting will be provided for purposes of personnel egress and continuance of critical activities during failure of the normal power source or during emergency conditions. These instances are anticipated to be infrequent. Emergency lighting will be incandescent. Emergency lighting fixtures will be provided in the control room and other operations buildings. The gas turbine packages have self-contained DC lights.

The steel emission stacks are proposed to be 125 feet high, a height which is below the lighting requirements of FAA. The stacks will also have platform lighting at emission monitoring locations, which will be used only during equipment inspection and maintenance.

- b. Could light or glare from the finished product be a safety hazard or interfere with views?

Light and glare impacts on neighboring properties are expected to be minimal. During the day, potential glare impacts will be minimal because of the planned use of non-reflective earth-tone/light paint colors on exterior surfaces. The potential for adjusting light directions and the use of supplemental light shields/vegetation to provide additional screening, if necessary, will minimize light spillover at night. There will be no anticipated glare impacts to pedestrians, bicyclists, or vehicular drivers using Halverstick Road (State Highway 9). As an industrial land use, the S2GF is expected to make a slight contribution to overall ambient light levels in the immediate vicinity. Because of the flat topography, some S2GF lights may be seen by distant or elevated viewers, but impacts caused by lighting, if any, will be negligible.

- c. What existing off-site sources of light and glare may affect your proposal?

None.

- d. Proposed measures to reduce or control impacts of light and glare, if any:

Measures to reduce or control impacts of light and glare are described above. They include the use of nonreflective paints, adjusting light directions, and the use of supplemental light shields/vegetation to provide additional screening, if necessary.

12. Recreation

- a. What designated and informal recreational opportunities are in the immediate vicinity?

There are no designated recreational opportunities on the site. Facilities within 5 miles of the site are shown on the following table.

PUBLIC PARK AND RECREATION FACILITIES WITHIN 5 MILES OF THE SUMAS GENERATING FACILITY

Name	Facilities	Owner
Sumas City Park (approximately 2.5 acres)	Picnic areas, restrooms, barbecue gazebo, maintained lawn area adjacent to Johnson Creek	City of Sumas
Howard Bowen Memorial Park (Ball Park – approximately 9 acres)	two lighted baseball fields, restroom facilities with showers, a rodeo ground used for the Sumas Junior Rodeo, and open space	City of Sumas
Playground (approximately 0.7 acre)	Tennis court, a basketball court, playground equipment	City of Sumas
Sumas Primary School Playfield	field and playground equipment	Nooksack Valley School District

- b. Would the proposed project displace any existing recreational uses? If so, describe:

No existing recreational uses would be displaced.

- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

None are required.

13. Historic and Cultural Preservation

- a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

Cultural resource surveys have been performed for the site and transmission line routes. The results of the surveys are described in Section 5.1.7 of the Application for Site Certification. There are no places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site.

- b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

As a result of the 1995 field survey, HRA documented one prehistoric lithic isolate in the northern half of the Project Area, which is not believed to be eligible for listing in the National Register. The 1998 survey recorded segments of a historical railroad, which maintains integrity of workmanship and setting. It may be eligible for the National Register based on the importance of the railroad to the Sumas region (National Register criterion a).

The project will not impact the potentially National Register-eligible railroad segment, which will be treated as a working railroad. Although the project will place the electrical transmission line along the railroad grade from Garfield Street north to the Canadian Border, the line will consist of single steel poles. The appearance of the line will be similar to lines that typically follow railroads.

- c. Proposed measures to reduce or control impacts, if any:

No mitigation measures are needed because the project will not impact the potentially National Register-eligible historical railroad segment. If later-stage design of the project cannot avoid

impacts to the railroad segment, the Applicant will conduct additional historical research on the railroad and will obtain a Determination of Eligibility from the State Office of Archaeology and Historic Preservation. If the railroad proves to be eligible, the Applicant will develop and implement mitigation measures, which would likely consist of preparing text and photographs to document the railroad segment near Sumas.

14. Transportation

- a. Identify public streets and highways serving the site and describe the proposed access to the existing street system. Show on the site plan.

The project site is located on the north side of State Route 9 (SR 9) near its intersection with Bob Mitchell Way to the east. Site access would be from Hesselgrave Way, a two-lane frontage road running east-west, and then turns south to intersect with SR 9 at the eastern boundary. See Section 5.2 of the Application for Site Certification for a complete description of the existing roadways.

- b. Is the site currently served by public transit? If no, what is the approximate distance to the nearest transit stop?

The site is not currently served by public transit. The nearest transit stop is approximately 12 miles away, in Lynden.

- c. How many parking spaces would the completed project have? How many would the project eliminate?

Parking will be provided for approximately 24 vehicles with two of the stalls being designated as accessible spaces. No parking spaces will be eliminated as a result of the project.

- d. Will the proposal require any new roads, streets, or improvements to existing roads or streets, not including driveways? If so, generally describe them, indicating whether they are public or private.

The proposal will not require any new roads, streets, or improvements to existing roads or streets.

- e. Will the project use water, rail, or air transportation, or occur in the immediate vicinity of these facilities? If so generally describe the use:

The project will not use water or air transportation. Burlington Northern Railroad operates a rail line that connects the border crossing at Sumas with the main north-south rail corridor at Burlington, WA. The rail line divides as it enters Sumas from the south and crosses SR 9 at two points west of the intersection with Cherry Street. On the north side of the project site, the west most line intersects with a spur line that serves the City of Lynden. The east line is considered the main line and branches to form a switching facility north of SR 9 and east of Bob Mitchell Way. Spurs also serve the Port of Bellingham inter-modal facilities located adjacent to the project area.

Construction planning has not identified a need to transport materials by rail. However, it is likely that a number of components used to construct the facility will require rail transport. Such transport is anticipated to be minor and the transfer of components to trucks for delivery to the site would occur at existing adjacent local rail spurs. A crane would be used to off load equipment from the rail cars and onto trucks that would then use Bob Mitchell Way and Hesselgrave Way to transport the equipment to the site.

Operation of the facility will not require rail transport except for the rare need to replace a major piece of equipment.

- f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur:

It is anticipated that there will be a maximum of 30 people employed at the site. Of these, eight will be working normal office hours and should depart during the PM peak period. The remaining employees would work 12-hour shifts and not arrive or depart until after the PM peak period has passed. Based on these assumptions it is anticipated that there would be only eight trips departing the site during the PM peak hour.

- g. Describe proposed measures to reduce or control transportation impacts, if any:

The proposed S2GF is anticipated to have a relatively minor impact on traffic operations of the local street system. No road improvements are needed. The overall level of service at the intersections analyzed will continue to be very good with or without the project. Future traffic conditions will continue to be driven by border crossing activity.

In 2002, with the proposed project operational, the intersections of Hesselgrave Way / SR 9 and Bob Mitchell Way / SR 9 will operate at a LOS level of A. No mitigation is warranted at these intersections to alleviate any project-related impacts.

The impact of project traffic on accident rates is minimal. No project specific mitigation to improve safety conditions along Bob Mitchell Way, Hesselgrave Way, or SR 9 is warranted.

15. Public Services

- a. Would the project result in the need for public services (for example: fire protection, health care, schools, other)? If so, generally describe.

The influx of construction workers into project area communities may result in a minor and temporary increase in the demand placed on public service providers. This demand increase could have a minor and temporary effect on local police departments, providers of emergency medical services, and local fire departments. The impact of project construction on local schools would be at most minor and temporary, as few out-of-state construction workers are likely to be accompanied by families. Construction-related impacts to local utilities are also expected to be minor and temporary.

During operation, essential public services will be provided by on-site security personnel, a fire brigade, and an emergency medical response team. Emergency response plans will be implemented during operations to protect plant employees and structures in emergency situations. Automated fire detection and suppression devices will be installed in the plant buildings to assist in the protection of employees and structures during fire emergencies. Use of on-site services and emergency response plans and devices, coupled with the relatively small number of employees that would staff the facility (a total of 23 employees divided over two or three shifts), will minimize additional demands placed on local public services.

Upon completion, the plant will be connected to established utility systems. A fairly large amount of water will be required for normal plant operations. The use of this water is not expected to have a negative effect on existing local water supply systems. Based on the operational characteristics of the plant, no utility capacity problems are anticipated. In

addition, operation of the project is not expected to have an effect on any public facilities that would mandate additional maintenance beyond that which is regularly scheduled. As a result, operation of the proposed project is not expected to have a significant adverse impact on existing public services or utilities in the project vicinity. Due to the small size of the operating staff, the project is not expected to burden the school system.

There would be a potential positive impact on public services and utilities due to project operation. The operational plant's assessed value would be approximately \$398 million, and would generate several million dollars per year in property and sales tax distribution to municipal, county and other local jurisdictions. A portion of these funds may be used to upgrade existing public services and utilities in the county.

- b. Proposed measures to reduce or control direct impacts on public services, if any:

Specific mitigation measures to lessen the impacts of the construction phase on public service providers in the project vicinity include the following:

- **Construction activities will be coordinated with local police and fire departments, and emergency medical service providers to ensure access to all locations in the project site vicinity and along the water pipeline corridor in the case of an emergency.**
- **During construction, precautions will be used to ensure that excavations do not damage underground utilities, including communications cables.**
- **To help mitigate loss of access and other traffic related impacts, adequate traffic control and signage, indicating closures and alternate routes, will be provided.**
- **Construction vehicle trips in and out of the immediate construction zone will be coordinated and scheduled away from "rush-hour" periods, to minimize general traffic disruption.**
- **Noise and dust problems generated by construction will be mitigated through the use of properly muffled construction equipment, and by the use of approved dust control methods.**

16. Utilities

- a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

All of the above with exception of septic system are currently available at the site.

- b. Describe the utilities that are proposed for the project, the utility providing the service and the general construction activities on the site or in the immediate vicinity which might be needed.

Natural gas: a new 16-inch gas pipeline will be installed in an existing right-of-way, paralleling an existing line from the Canadian border as described above. The existing line terminates at the Sumas Cogeneration Facility about one-quarter mile south of the S2GF. The new 16-inch line will be extended to the project site. The gas pipeline will connect with the Westcoast Energy Inc. pipeline system at the border.

Water: the City of Sumas will provide water service to the site. Some modifications to the Sumas water system will be required, including constructing an intertie between the potable and industrial

water main systems and installing control valves to balance system flows and pressures. A new underground pipeline will be built to connect the Sumas system with the City of Abbotsford well fields, on the Canadian side of the border, to provide Sumas with additional water resources.

Wastewater: the S2GF will discharge cooling tower blowdown and other waste streams directly to the City of Sumas sewer collection system and ultimately to the Joint Abbotsford Mission Environmental System (JAMES) treatment plant in Canada. An existing contract between the City of Sumas, the City of Abbotsford (Canada) and the Fraser Valley Regional District (FVRD, Canada) will be augmented to accept the discharge. Abbotsford and FVRD are conceptually willing to provide the contract increase, as a similar amount of capacity was earlier agreed to among the same parties for a proposed industry that was not constructed; hence, the capacity it would have used will be renegotiated for use by the S2GF. The City of Sumas will contract with Abbotsford and FVRD for the sewer service, and SE2 will be a customer of the City of Sumas. A new sewer main will be constructed from Abbotsford to Sumas to provide the necessary conveyance capacity.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature

Date Submitted_____